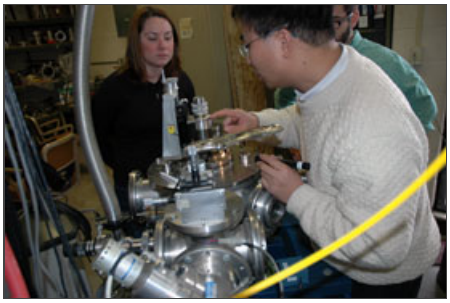
INL nuclear engineer Heather MacLean (r) recently visited the University of Wisconsin to foster collaborations with students and faculty. MacLean poses with the UW team in the UW Ion Beam Lab.

User Facility promotes scientific collaboration

by Brett Stone, *Nuclear Science & Technology Communications intern*

As part of an ongoing effort to promote collaboration between Idaho National Laboratory and faculty and students of universities across the country, INL nuclear engineer Heather MacLean, Ph.D., spent two weeks on a faculty-staff exchange at the University of Wisconsin-Madison.



(left to right) Heather MacLean, Guoping Cao and Tyler Gerczak (hidden) position a sample in the ion beam for a demonstration.

There, MacLean was able to interact with university faculty and students who had taken part in conceptualizing and designing one of the top projects taking place at INL's Advanced Test Reactor National Scientific User Facility. The test examines different materials for possible use in next generation nuclear power facilities and for extending the life of current plants.

While there, MacLean presented a colloquium on fuels research and spoke about her experience with the Advanced Fuel Cycle Initiative fuels programs. She gave a brief summary of the work being done on the Next Generation Nuclear Plant and Reduced Enrichment for Research and Test Reactor programs at INL.

According to MacLean, one of the main goals of the trip was to build up the relationship between INL and the university's students and staff. MacLean sat in on the senior design class presentations on reactor design concepts. She also made herself available to answer students' questions about things like fuel selection. This was all an important part of what MacLean calls "pre-recruiting" some of the best nuclear students in the nation.

(left to right) Heather MacLean, Kumar Sridharan, Tyler Gerczak (seated) look at scanning electron microscope images.

Tyler Gerczak, a graduate student at the University of Wisconsin, is one example. Gerczak has worked on, among other projects, coating performance for uranium dioxide fuel kernels for high temperature reactors. He had the chance to team up with MacLean during her visit. He says this allowed him the opportunity to ask questions about different projects at INL, learn new analysis techniques and gain a different perspective on his educational experience.

"The national lab environment is one possibility that I'm very much interested in," Gerczak said, speaking of his plans for after his time at Wisconsin. "A place like the INL is someplace I would envision myself ending up." To continue promoting this type of collaboration, a second trip is scheduled for MacLean to follow up on what was begun in this first trip.

The first part of the University of Wisconsin's experiment is due to finish in the ATR in October, when INL and the university will begin working together to analyze the results. The samples included in the first test batch will have spent a full year being irradiated. After the data from this first batch is gathered, it will be compared to the second batch of samples, due to leave the reactor in December 2010, after more than two years of irradiation.

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